

## ABSTRACT OF THE DISCLOSURE

An electron beam physical vapor deposition (EBPVD) apparatus and a method for using the apparatus to produce a coating material (e.g., a ceramic thermal barrier coating) on an article. The EBPVD apparatus  
5 generally includes a coating chamber that is operable at elevated temperatures and subatmospheric pressures. An electron beam gun projects an electron beam into the coating chamber and onto a coating material within the chamber, causing the coating material to melt and  
10 evaporate. An article is supported within the coating chamber so that vapors of the coating material deposit on the article. The operation of the EBPVD apparatus is enhanced by the inclusion or adaptation of one or more mechanical and/or process modifications, including those  
15 necessary or beneficial when operating the apparatus at coating pressures above 0.010 mbar.